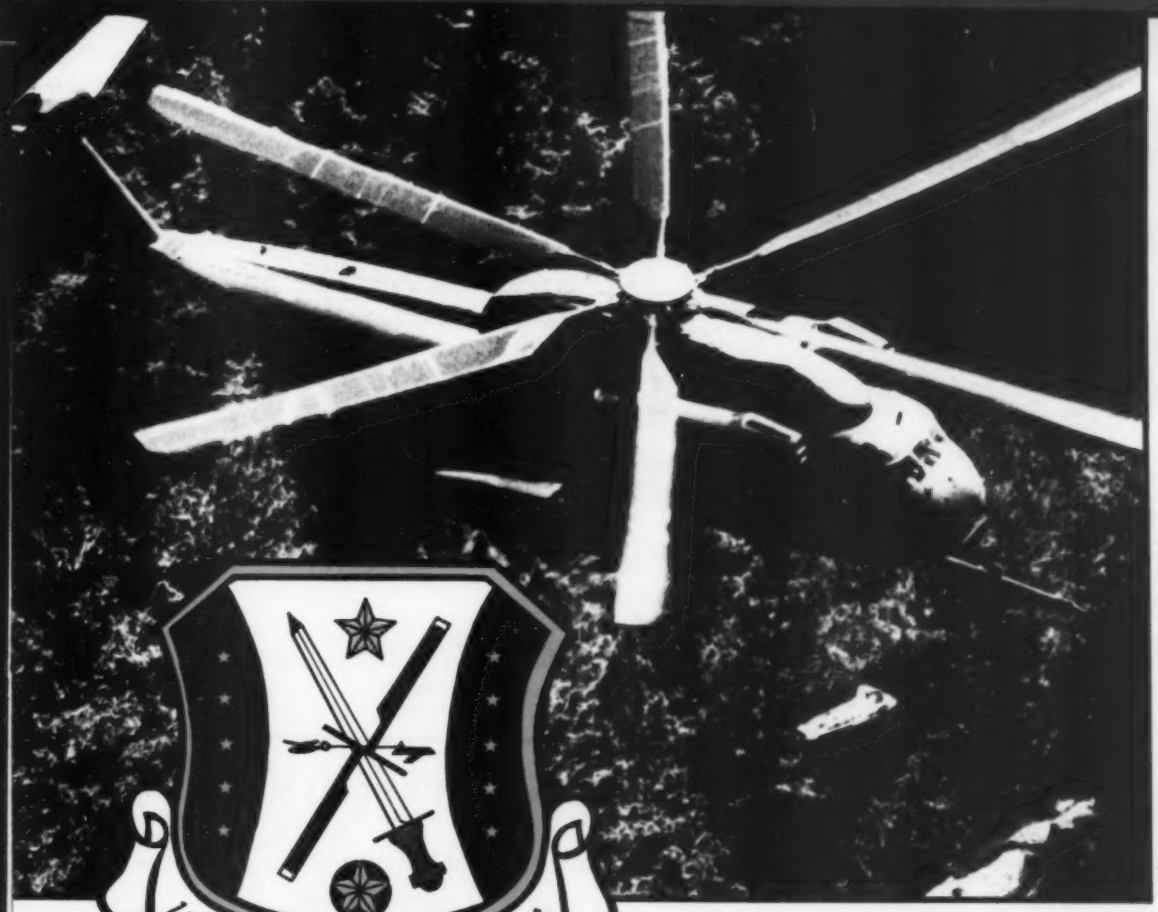
TMF

October 1989

THE MAC FLYER - For Greater Safety in MAC Air Operations

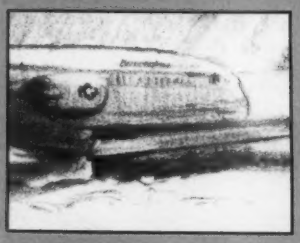


1550th Combat Crew Training Wing. . . page 16

TMF

THE MAC FLYER—For Greater Safety in MAC Air Operations

October 1989 MACSP 127-5 VOL XXXVI NO. 10



page 8

page 16

FEATURES

3 Profound Revelations
Can you write a "bestseller?"

4 More Than Just A . . . Cause For Concern
Do not take anything for granted.

8 Departing The Prepared Surface
Get-home-itis strikes again.

11 *TMF* Instrument Quiz

13 The Right Time, But The Wrong Place
A case of mistaken identity.

16 1550th Combat Crew Training Wing
Combat U.

24 An Unheard Voice
TMF anniversary reprint.

DEPARTMENTS

7 Excellence In Airmanship
20 Flying-Hour Milestones
21 Mishap With A Moral
26 Quickstoppers
31 After Deadlines

Gen. Hansford T. Johnson — Commander in Chief
Brig. Gen. James L. Cole, Jr. — Inspector General
Col. Thomas M. James — Director of Safety

Lt. Col. Richard L. Buck — Supervising Editor
Maj. Dale E. Van De Ven — Associate Editor
Maj. Stephen E. Behr — Associate Editor
Mrs. Frances A. Caldwell — Writer/Editor
Mr. Tommy F. O'Laughlin — Art Director

The MAC Flyer is published by the Director of Safety, Military Airlift Command. The contents are informative and not regulatory or directive. Names of people and places in mishap stories are representative and not necessarily of the aircraft or equipment involved. Information in any article may not be construed as incriminating under Article 31, UCMJ.

Comments, comments, and criticisms are welcomed. Write: *The MAC Flyer*, HQ MAC/IGFE, Scott AFB, IL 62225-5101. Or call Autovon: 576-3634/5642 or commercial: (618) 256-3634/5642. The editors reserve the right to make editorial changes in manuscripts which they believe will improve the material without altering the author's intended meaning.

Subscriptions are available from: The Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Changes of address for subscription mailing should be sent to the GPO. Give both old and new address, including zip codes. USAF Active and Air Reserve Forces units should establish magazine requirements through the OPR (HQ MAC/IGFE). Other U. S. Military units should consult administrative directives. *The MAC Flyer* is published at an approximate ratio of one magazine for every five MAC crewmembers, and one for every twenty MAC support personnel. Distribution X: OPR: HQ MAC/IGFE ISSN 0024-788X

PROFOUND REVELATIONS FOR THE 90s!

Yessiree! Fall is here and it's time, once again, to dust off those lap computers and enter the 1990 MAC Flight Safety Writing Contest!

"Profound revelations"—Everybody gets them. They are like surges of imagination that peak when you least expect them. Put *your* revelations on paper and win yourself a desk set (first through third place); a plaque (fourth thru twelfth); literary notoriety with over tens of thousands of readers worldwide, or all of the above. At the very least you'll be rewarded with a one-year complimentary subscription to the world's most elite (objectively, of course) safety publication, *The MAC Flyer.* No one loses, everybody wins!

Use your expertise to drive home a point. Get that pet peeve out of your craw, down on paper, and in the mail before 31 March 1990. It could do us all some good.

THE RULES

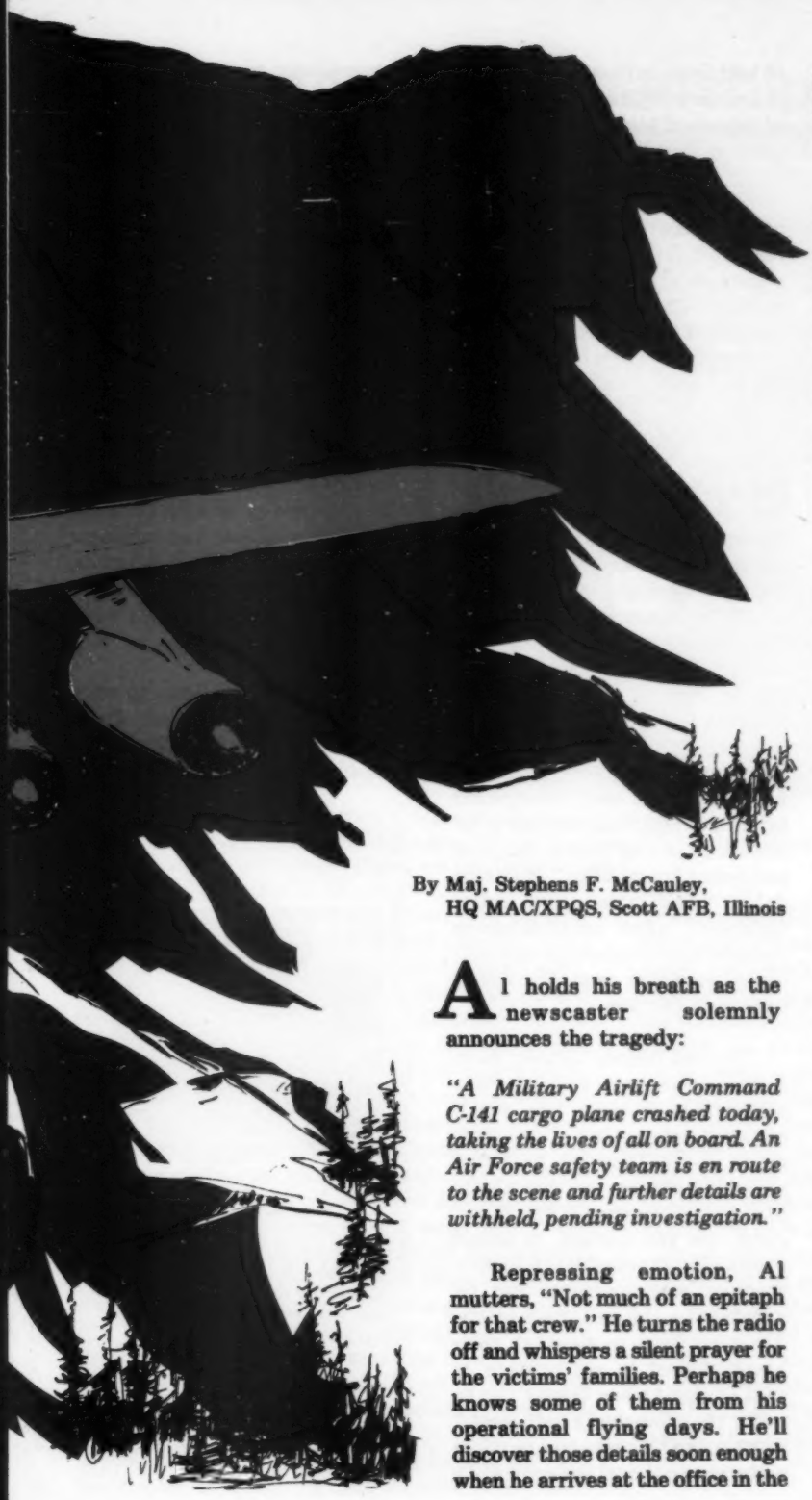
The 1990 MAC Flight Safety Writing Contest is conducted according to MACR 900-3 and these rules. Entries must be original, unpublished, contain an aviation safety/mishap prevention message, and be postmarked no later than 31 March 1990. Stories must be between approximately 1,000 and 3,000 words long (about 6 to 14 double-spaced typed pages). Poetry should average 75 to 100 lines. Manuscripts must be typed, double-spaced, and submitted in two copies. Identify entries by title only and attach a cover sheet indicating author's name, address, duty phone, unit and home address. Please include a brief biography.

The contest is open to all. Entries qualifying under the above rules earn their author a complimentary one-year subscription to *TMF.* However, desk sets and plaques may be awarded only to military members and civilian employees of the Department of the Air Force and Air Reserve Components. Other entries may be selected for Honorable Mention, Special Category.

Winning entries will be published in *TMF.* Submit to:

MAC Flight Safety Writing Contest, 1990
HQ MAC/IGFE
Scott AFB, Illinois 62225-5101

1989 MAC Flight Safety Writing Contest Honorable Mention



By Maj. Stephens F. McCauley,
HQ MAC/XPQS, Scott AFB, Illinois

Al holds his breath as the newscaster solemnly announces the tragedy:

"A Military Airlift Command C-141 cargo plane crashed today, taking the lives of all on board. An Air Force safety team is en route to the scene and further details are withheld, pending investigation."

Repressing emotion, Al mutters, "Not much of an epitaph for that crew." He turns the radio off and whispers a silent prayer for the victims' families. Perhaps he knows some of them from his operational flying days. He'll discover those details soon enough when he arrives at the office in the morning. A familiar refrain drifts into his thoughts. *"There, but for the Grace of God, go I."*

The last time a C-141 crashed, Al was out flying "in the system." When news spread that his squadron was involved, his wife had been worried sick he was on that crew. No cause for her to worry this time, though. Al's current staff job involves no operational flying (the ironic curse of having too much "gate time.") For this mishap, as is always the case, there'll be plenty of initial speculation (mostly inaccurate) about what caused the crash.

"I hope the crew didn't screw up!" exclaims Al's neighbor, Tom, as he pops in to verify this "too-close-to-home" news. "Whenever they blame the crew, the rest of the guys in the unit are affected by a gloomy cloud for years afterwards." (Displaced guilt, perhaps.)

The two former crew dogs pass the next hour exchanging tales of close calls they'd each survived. The importance of the *crew concept*, a team effort, comes up. Tom volunteers an episode from one of his European trips. He was with a very green copilot (first trip after "dollar ride") who was a bit short on cockpit familiarity details. For example, during cruise, when exchanging aircraft control for the first time, the young copilot became frustrated because the control yoke and pedals weren't properly aligned in front of him. He was quickly given a mechanical design lesson on how to slide the seat sideways into position. (Hard to believe, but true!) Later, this same copilot couldn't get his quick-don oxygen mask microphone to function, since he had plugged the male end of his mask interphone chord into the female end of the same mask!

Tom reflects out loud: "On those long overwater legs with an inexperienced crew, you can't afford to fall into a complacent, *just minding the store while merrily droning along,* attitude. You've got to stay on top of navigating and systems status, and rehearse the arrival." Despite his alertness for the unexpected, descent for landing on that mission gave rise to crisis. Tom had become painfully aware of a sinus block above his right eye which became more painful with each increment of altitude lost. His inexperienced copilot, when asked if he could take over for the approach and landing, wasn't ready to handle it. So, grinding his teeth through blinding pain, Tom had managed to complete the approach to a "not too pure" landing.

"You've heard that a *good landing* is one *you . . . can walk away from.* That day we added the definition of an *'excellent landing.'* One you *can taxi-in from."*

Al recounted a tale of his own. His crew had been alerted to fly to Andrews to position for a high priority "Volant Silver" (Vice Presidential support) mission. Andrews weather was Delta Sierra; blowing snow with RVR at minimums for the CAT II ILS. Their fuel, of course, would permit only one approach—so it had to be good. The AWLS worked perfectly (to everyone's surprise). The MDA light came on at 100 feet AGL, but Al's copilot couldn't see approach or runway lights. As required for this demanding procedure, the copilot commanded "Go around." Al, however, continued for a few more critical seconds and then announced, "I've got the rabbit." Yes, they'd made it in, but not by the book. In fact, the vis was so low that their "Follow me" truck got lost on the apron while trying to lead them to their parking spot! It had certainly been a classic case of perceived high priority leading them to "press the mission."

Tom recalls some profound words recently expressed by a command flight surgeon. "It isn't that experience is not a very good teacher. Experience is a great teacher. The problem is, *mother nature always gives the test before she gives the lesson."*

Tom winces as he recalls one of his own lucky days out on the line. Command Post swapped his aircraft for one which had some recent adjustments to the jack screw in the T-tail. They rushed through preflight to meet the scheduled departure window, and Tom had lined up his Starlifter for takeoff when his sixth sense moved him to cycle the flight controls for one last check. Sure enough, the yoke felt sticky when he pulled it full aft—it just didn't feel right. That seed of suspicion led him to reject the takeoff prior to even releasing brakes. Since he had risked "unjustified" departure delay, vindication and relief followed when maintenance declared that an elevator-way-out-of-rig condition was discovered upon reinspection.

The two friends casually swap a few more war stories—rude awakenings or close calls which occurred when they'd let their guard down. They try to derive some conclusion or moralistic panacea for survival in the flying game. On the surface, it seems simple enough—you've got to stay alert on every mission and be prepared for things to deteriorate. Aviators have to keep all their senses keyed in anticipation of that moment when things "go to hell in the proverbial handbasket." Cultivating this mindset requires maintaining a cool exterior while internalizing quiet paranoia.

Standing to leave, Tom glances at his watch and shrugs off the frustrating question of the day. They won't solve the accident prevention puzzle to satisfactorily cover every situation for every crew. But maybe this recent "lesson in blood" will revive interest in their message. Over the years, they've heard or spoken just about every flight safety pitch imaginable. The pleas have ranged from quasi-intellectual (always do it by the book) to the emotional (it's your ass). Commanders at every level must constantly validate and reinforce the self preservation instinct in their crews, reminding operators to maintain vigilance with a wary and suspicious eye.

Bottom line: Listen to that little voice in your head. Trust your self preservation instincts. *Question everything at least once!*

Major McCauley is a former *TMF* editor who has abandoned ship and is now rumored to be hiding in HQ MAC/XPQS.

Excellence in Airmanship

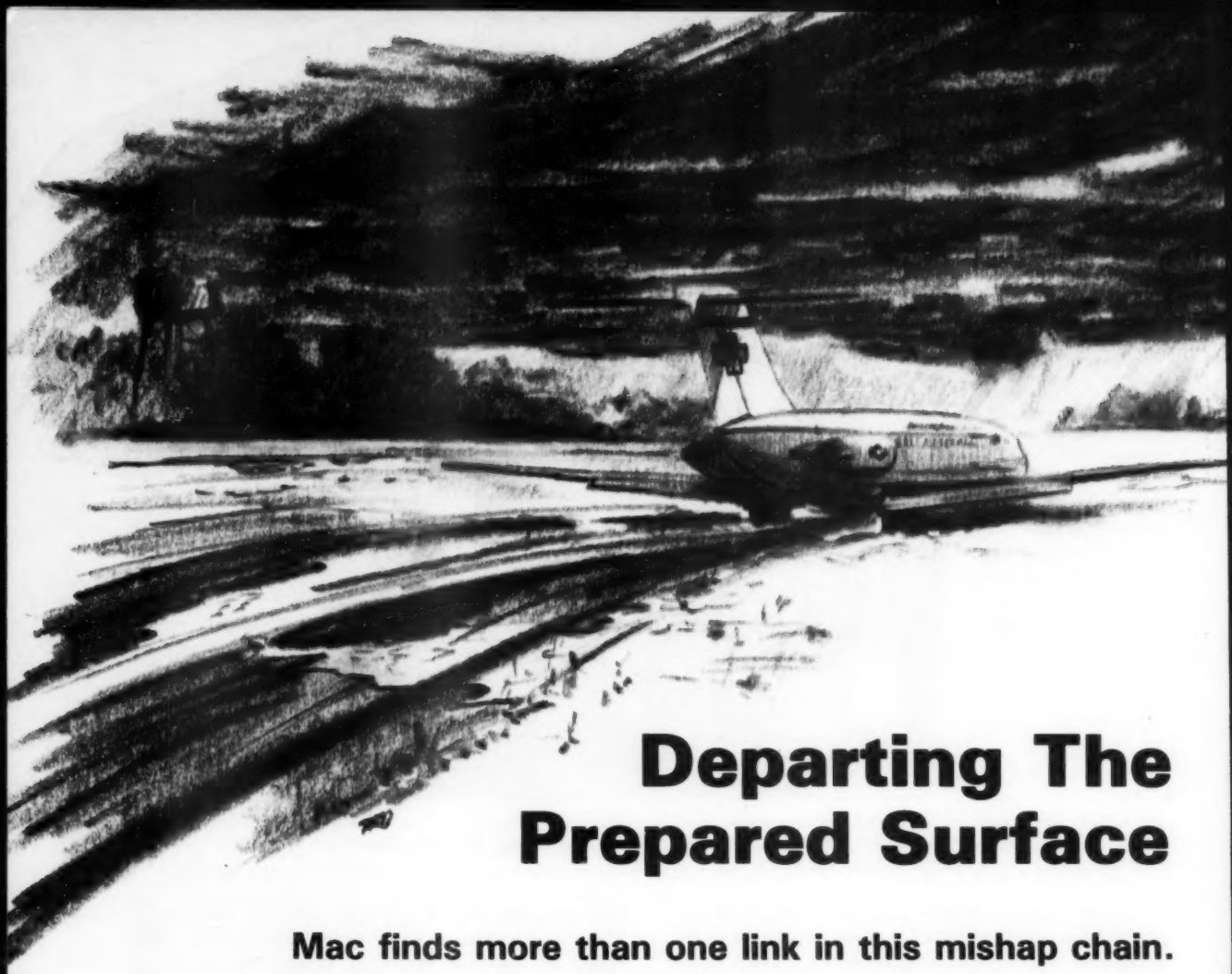
Left to Right; Front Row: 1st Lt. Terry L. Johnson; Capt. David L. Stoner.
Second Row: SrA. Michael V. Rizzo; Sgt. Jeffrey M. Litz; TSgt. Richard S. Lee, III; and A1C Robert Bowman.
Not Pictured: 1st Lt. Kenneth M. Mitchell and Sgt. David J. Knight.

Capt. David L. Stoner and Crew, 40th Tactical Airlift Squadron, Pope AFB, North Carolina, were cruising at 22,000 feet over the North Atlantic Ocean, 6 April 1989. Four hours into the flight, this C-130 crew heard a loud explosion, followed by rapid decompression and violent shaking. Captain Stoner disengaged the autopilot, scanned the instruments, directed the crew on oxygen, and began a shallow descent. The navigator, 1st Lt. Kenneth M. Mitchell, provided an initial heading to Keflavik, Iceland, the nearest airfield, over 250 miles away. TSgt. Richard S. Lee, III., loadmaster, reported the passengers didn't appear injured but that a large part of the fuselage at the wing root had blown off, resulting not only in structural damage, but in litter straps and wires entangling flight and throttle control cables. 1st Lt. Terry L. Johnson, copilot, managed to broadcast one emergency message before the HF radio went dead, its antennas cut off by debris. He then coordinated the descent on another system with the help of a nearby Navy P-3.

While Sergeant Lee and Sgt. Jeffrey M. Litz, loadmaster, were clearing control cables, A1C Robert Bowman, Sgt. David J. Knight and SrA. Michael V. Rizzo were looking after the passengers, getting them ready for possible ditching, while securing loose objects blowing freely in the cargo compartment. In the meantime, Captain Stoner started his descent, checked his aircraft's controllability, and prepared for an emergency landing at an airfield with weather at minimums due to a blowing snowstorm.

Despite a continuous buffet from the hole in the fuselage and the need for higher than normal approach and landing speeds and no reverse thrust to avoid ingesting or dislodging items, Captain Stoner and crew flew a flawless approach, they broke out only 300 feet above the ground, and stopped the aircraft on the runway.

The immediate and correct actions taken by Captain Stoner and crew to recover an airplane crippled by a loss of a 24-square-foot section of its fuselage prevented possible loss of life and aircraft destruction. Their actions truly deserve the Excellence in Airmanship Award. Well done from *TMF*.



Departing The Prepared Surface

Mac finds more than one link in this mishap chain.

"Welcome back, Capt. MacKenzie, how was your TDY?" inquired Col. Winston L. Noxubee. "What did you find in your investigation?"

"Sir, I can think of more enjoyable ways to spend a holiday than going across the state to investigate a mishap," responded Capt. Brad "Mac" MacKenzie.

"As you know Sir, the mission was a routine airevac flight, on the next to last leg of a six-leg trip. The crew didn't visit the weather shop before departing the last stop because they had updated weather for the last three legs by calling a PMSV en route. Center passed destination weather as 1,400 feet obscured, visibility three quarters of a mile with snow and fog, winds 300 at 20 knots gusting to 24 knots, with ice on runway, (patchy, dry).

"As soon as the IP heard the weather he asked the pilot in the jump seat to call pilot to dispatch (PTD) for the latest RCR/RSC. The crew didn't call PMSV since this base has very little fixed wing traffic and the weather station has

limited forecasting service on weekends. On the day of the mishap, however, a forecaster was on duty because of severe weather in the local area. The jump seat pilot had some difficulty contacting PTD and was informed someone was on the way out to check the runway condition. While the third pilot was talking to PTD, the IAC briefed the copilot on how the crosswind landing would be made. He instructed the copilot that after landing he was to maintain wing down control on the yoke while applying forward pressure once the pilot transitioned to nose wheel steering. By now the flight was ten miles from destination and Center handed them off to Tower.

"When the evac first contacted Tower they received the normal response—an altimeter setting and runway condition described as 'ice on runway; patchy, dry.' The copilot asked for the RCR and after a slight delay, Tower replied with 'loose snow on runway, RCR 19.' The pilot occupying the jump seat checked crosswinds versus the 55 series limits for RCR. During the ILS approach, Tower reported the winds three times while the aircraft was on short final. The pilot increased his approach speed to compensate for gusty winds and used 40 degrees of flaps for landing. Calculated approach speed was 138 knots, and the pilots estimated they crossed the threshold between 136 and 142 knots. During the investigation we found out the Flight Data Recorder didn't work, so we relied on the crew's memory for speeds.

"Based on tire tracks left in the snow and ice, touchdown of the right main gear was about 1,100 feet past the threshold and on centerline. The left main and nose gear touched about 50 feet further down the runway. The pilot said he had almost full right aileron, nose down elevator, and near full left rudder deflection. The spoilers and thrust reversers deployed normally, with idle reverse thrust selected. The aircraft tracked down runway centerline for more than 3,000 feet, but at the 4,000-foot remaining marker, and with a speed of about 100 knots, the aircraft began to rapidly drift right.

"Since the pilot was already holding nearly full control deflection to counter drift caused by the 20-knot crosswind, he (as prebriefed), gave control of the yoke to the copilot, and attempted to use nose wheel steering to correct back to runway center line. The pilot had full left rudder, brakes pushed to the floorboards, and nose wheel steering cranked full left while the copilot held full down right aileron and forward yoke pressure. The aircraft continued to drift right and exited the upwind side of the runway, stopping about midfield.

"The crew chief and third pilot immediately disembarked using the airstair to look for signs of fire or fuel leaks. An emergency egress was not needed since there were no signs of damage or fires and the fire trucks were already on scene. An ACM on the flight said the runway was so slick he could barely stand while walking across it."

"Okay, you've told me what happened during the landing; now tell me why the crew got suckered into landing on what must have been a very icy runway."

"Yes, it was a slick runway, but the crew allowed themselves to be led down the primrose path with some help along the way. Back at the originating station, the crew got a full weather brief. They also updated their 175-1 with an in-person briefing at the third stop. For the rest of the trip they either called a PMSV en route or after landing to update weather and get takeoff data. They met face to face with an enroute forcaster only once. Some time after that in-person briefing, what had been a slow-moving weather system, picked up speed and intensity.

"Severe weather was indicated in two SIGMETs the day of the mishap: One for moderate to severe turbulence and the other for moderate to severe mixed icing in clouds and in precipitation below 8,000 feet AGL. For several reasons, our crew didn't get either warning. ARTCC broadcasts cover the affected area and all sectors within 100 miles. When those SIGMETs were issued, the mission was too far away to receive the broadcast. SIGMETs are also broadcast on selected VORs on the hour and half hour. When the crew contacted PSMV for weather updates, they didn't ask about severe weather since the original forecasts didn't show rapid movement of the frontal area. Had the crew visited the weather shop at the prior stop, they might have noticed the severe weather movement or been given PIREPs from other aircraft flying near their destination, but they elected to shorten the already minimum ground times and get home early."

"I just don't believe that one of our newest IPs would make such an elemental mistake in mission planning," commented Colonel Noxubee.

"The crew had help, sir. They weren't the only ones who wanted to get home early. I found the folks in base ops hadn't been doing everything they could to accurately record and broadcast the runway conditions. After the front passed, drizzle turned into ice pellets and finally became snow

grains and snow. Runway conditions slowly deteriorated as the temperature dropped during the day and early in the afternoon an airman in base ops took RCR readings. He found the runway to be dry with patches of ice. When relayed to Tower and Weather, the RCR came out as 'ice on runway; patchy, dry.' This was the description originally relayed to the crew; when winds were checked for an icy runway the crosswind was above the operating limits. Next, the crew was informed that a new braking action test was 'in progress.' By then, the evac was ten miles out and intercepting the localizer for the ILS approach.

"Tower called ops and requested a new RCR at about the same time the evac was beginning the approach. One of the airmen checked and reported there was some loose snow, but braking action was good. This was relayed to the crew as 'loose snow on the runway, RCR 19 (not as bad as ice on runway), and the crosswind component was in limits; the flight could land and offload its two patients. I'm certain that when the crew heard about the better braking action, they must have thought 'Hey, the plows have been out, this will be a piece of cake.' It sounded like everything was legal to land. There was just one thing wrong with the new RCR given to our crew: it was taken on the ramp, almost a mile away from the runway.

"There was another problem with the way RCRs were taken and reported—they weren't being done IAW the T.O. When runway conditions are rapidly changing and temperatures are near freezing, braking tests should be made quite often. I don't think one braking test in five hours, while weather conditions changed from pleasant fall weather to harsh winter, is what the T.O. meant."

"You mean our crew didn't know the real RCR until after they landed?"

"Correct. They weren't informed of the actual RCR until after the mishap."

"So our crew didn't have a prayer of keeping the plane on the runway. This mishap could have had a more disastrous ending."

Mac reflected on the colonel's words for a moment before speaking. "Sir, I think there are still some facts you need to know about the mishap.

"As you know, the pilot was a new IP with about 500 hours in the aircraft at the time of the mishap. Studies have shown that pilots with around 500 hours flight time in a particular aircraft tend to be overconfident in their flying abilities. Sometimes a pilot with this level of experience will revert to habits and/or techniques learned in prior aircraft types. In this case, when the pilot briefed the copilot to 'keep full down aileron during landing roll,' a procedure used in the weapon system he flew during his previous assignment, he was confident that it would work in our aircraft. He wasn't fully aware that with this aircraft configuration, the combination of full aileron and spoiler augmentation would be highly effective for directional control of the aircraft. So effective that nose wheel steering inputs and rudder inputs didn't work to keep the aircraft on centerline. The 'old heads' at the squadron knew that spoiler augmentation was effective for steering our aircraft but didn't pass that knowledge on.

"Use of reverse thrust in high crosswinds contributed to directional control problems. Airflow across the vertical stabilizer and rudder is needed for effective yaw control. Reverse thrust from engines mounted on the fuselage disrupts the airflow required for rudder control effectiveness as ground speed decreases. Loss of effective rudder control is a function of the amount of reverse thrust, aircraft velocity, and effective wind component. On a low friction runway surface, loss of rudder yaw control is compounded by loss of cornering friction of the nose wheels. Some aircraft flight manuals limit the use of reverse thrust based on crosswinds; in this incident that wasn't the case.

"During the investigation, simulator flights showed a crew could keep the aircraft tracking along centerline as long as they didn't use both reverse thrust and full aileron inputs. An aero engineer revealed that once nose wheel steering is turned beyond about eight degrees and the aircraft is faster than taxi speed, nose wheel tires begin to skid. When the pilot began using full nose wheel steering he lost the last remaining bit of directional control.

"Errors by both crew and base ops staff set up the mishap chain of events."

"How do we keep other crews from doing the same thing, Captain MacKenzie?"

"I've submitted three AF Form 847s to amplify the Dash One descriptions of landing at maximum crosswinds, and use of thrust reverse during maximum crosswinds on icy runways. One of our flight safety officers will coordinate a briefing with the folks in stan eval to use during operations meetings and their winter operations letter."

"Great! We'll need it. We may be in for some ugly winter storms this year." ✈

TMF Instrument Quiz

Island Diversions

1. What navigational aids are required to fly the ILS-A RWY 24R?
   a. Localizer and glideslope.
   b. Localizer, glideslope, and DME.
   c. Localizer, glideslope, and ADF.
   d. VOR, DME, localizer, and glideslope.

2. Which Palma de Mallorca is minimum safe altitude based on?
   a. PA.
   b. MJV.
   c. CST.
   d. SSJ.

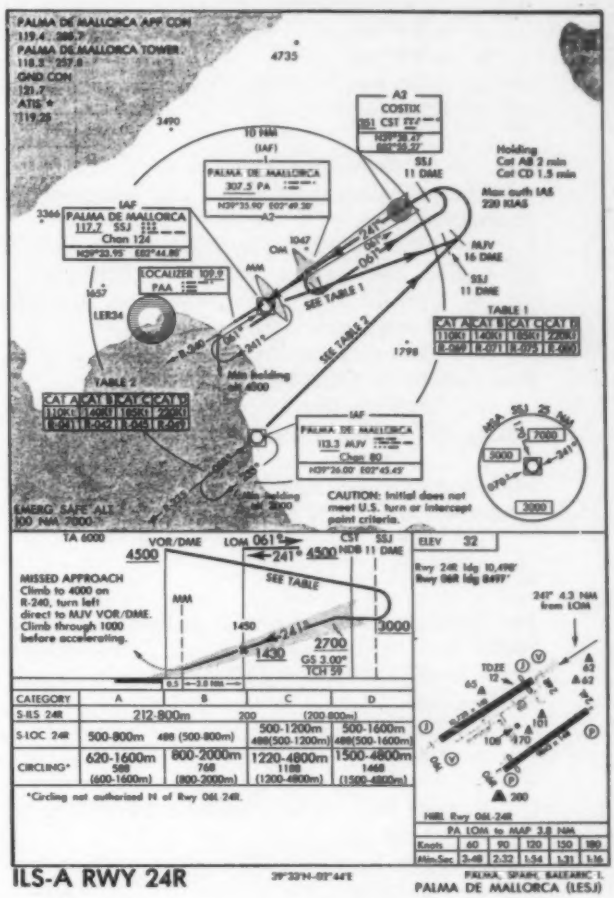
3. The minimum safe altitude for a missed approach is:
   a. 4,500 feet.
   b. 5,000 feet.
   c. 4,000 feet.
   d. 3,000 feet.

4. Emergency safe altitude is:
   a. 7,000 feet.
   b. 6,000 feet.
   c. 5,000 feet.
   d. 4,500 feet.

5. What radial will you fly outbound from MJV in your category "C" aircraft?
   a. 075 degrees.
   b. 080 degrees.
   c. 045 degrees.
   d. 049 degrees.

6. The highest spot elevation is:
   a. 1,798 feet.
   b. 1,047 feet.
   c. 1,657 feet.
   d. 4,735 feet.

7. You're cleared direct to PA to hold and conveniently aligned to use a teardrop course. The no-wind teardrop course:
   a. Shouldn't exceed 091 degrees.
   b. Shouldn't exceed 106 degrees.
   c. Shouldn't exceed 030 degrees.
   d. Shouldn't exceed 045 degrees.



ILS-A RWY 24R

8. Approach radar is out and you've been told to hold at PA. For category "C" aircraft, timing is:

a. 1 minute inbound.
b. 1.5 minutes outbound.
c. 1.5 minutes inbound.
d. 2 minutes inbound.

9. The minimum holding altitude at PA is:

a. 4,500 feet.
b. 5,000 feet.
c. 7,000 feet.
d. 3,000 feet.

10. You're cleared for approach while inbound at 4,500 feet. Holding at PA, flying your category "C" aircraft, you can:

a. After crossing PA, turn outbound on a 061-degrees heading and descend to 3,000 feet.

b. Proceed to SSJ, turn outbound, intercept SSJ R-075 and then descend to 3,000 feet.

c. After crossing PA, intercept SSJ R-J075, then descend to 3,000 feet.

d. After crossing PA, turn outbound to intercept the 075 degrees course and descend to 3,000 feet.

11. Straight-in ILS minimums for this approach are compatible with MAC 55-Series regulations.

a. True.
b. False.

12. Ceiling is computed by subtracting the field elevation from the DH or MDA and, if not in even hundreds of feet, rounding off upwards to the next hundred foot.

a. True.
b. False.

13. Runway 24R, runway available for landing is:

a. 10,728 feet.
b. 9,843 feet.
c. 10,498 feet.
d. 8,497 feet.

14. After intercepting the localizer, Approach tells you to expect to circle to land RWY 24L. Your circling airspeed is 142 knots, so you adjust your MDA to:

a. 1,220 feet.
b. 1,500 feet.
c. 1,430 feet.
d. 1,468 feet.

15. What visual landing aids does RWY 24L have?

a. Centerline lights and VASI.
b. Centerline lights and runway lights.
c. Centerline lights, runway lights, and PAPI.
d. Centerline lights, touchdown zone lights, runway lights, and PAPI.

ANSWERS

1. d. The title (ILS-A RWY 24R) indicates only the navaids required for final approach guidance. To get to final approach or follow missed approach guidance you need VOR and DME. (AFM 61-37, para. 7-6a(3)(a).) *Note: Don't let the "ILS-A" confuse you; this is not a circling approach. Some nations use letters in approach titles instead of numbers.*

2. d. When it isn't clear which facility the minimum safe or emergency safe altitudes are based upon, the facility will be indicated. (AFM 61-37, para. 7-6b(1)(f).)

3. d. 3,000 feet is the minimum safe altitude for missed approach; 4,000 feet is an ATC restriction.

4. a. 7,000 feet. Provides a 2,000-foot obstacle clearance in designated mountainous areas. The Balearic Islands are designated a mountainous area in FLIP AP/2, Chapter 7. (AFM 61-37, para. 7-6b(1)(f).)

5. c. The 045-degree radial, found in Table 2.

6. d. 4,735 feet, located near top-center of the plan view. Highest spot elevation is indicated by bold type. (FLIP Terminal Legend.)

7. b. The no-wind teardrop course for a holding pattern or holding pattern (in lieu of procedure turn) can be up to 45 degrees. Since course guidance is available, you'll attempt to intercept the selected teardrop course outbound. (AFM 61-37, para. 9-6a(3).

8. c. Published inbound timing is 1.5 minutes for category "C" aircraft.

9. a. Minimum holding altitude at PA is 4,500 feet shown on the profile view.

10. a. Proceed to the fix, turn outbound, and descend to 3,000 feet. (AFM 61-37, para. 12-3d.)

11. a. True. 800 meters converts to one half statute mile. (METAR conversion table or Flight Information Handbook.)

12. a. True. Found in notes to IFR Landing Minima, FLIP Terminal Publications.

13. c. Runway 24R threshold is displaced 230 feet.

14. b. Category "C" circling airspeeds are up to 140 knots. Since your airspeed is greater, use the next higher circling minimums (including ceiling and visibility.) (AFM 61-37, para. 14-6b.)

15. c. Runway lights, centerline lights, and Precision Approach Path Indicator. (Aerodrome Sketch and Flight Information Handbook.)

THE RIGHT TIME, BUT THE WRONG PLACE

By F/O Richard P. Shipman
(Piedmont Airlines)

The right time, but the wrong place—that's one way to describe landing at the wrong airport—Not an uncommon event. A Boeing 737 lands at Frankfort, Ky., late at night, instead of Lexington. A B-727 rolls out at MacDill AFB rather than Tampa International, five miles north of MacDill. Another B-727 pilot lines up on Runway 34 at Quonset Point Naval Air Station thinking it's Runway 34 at Providence-Green State, R.I., but manages to detect his error before landing.

To the non-flying public, these incidents seem to be almost laughable elemental mistakes—like driving your car into somebody else's garage. Pilots who fly the line, however, know there is nothing funny about landing at the wrong airport, nor is it hard to understand how it happens.

Even without accurate statistics the number of documented cases of "mistaken airports" comes close to putting this mistake into the "those-who-have-and-those-who-will" category. The consequences of misidentifying an airport can range from simple embarrassment to tragedy.

Perhaps the most famous landing at the wrong airport occurred several years ago in the wide-open spaces of Wyoming. A B-737 headed for Sheridan landed instead at Buffalo, Wyoming. What sets this case apart from many others is the two airports are almost 36 miles apart! The crew succeeded in stopping the airplane on Buffalo's 4,500-foot runway, but the aircraft could not depart until its weight was reduced. The pilot became a folk hero in Buffalo, where this kind of excitement doesn't happen every day.

The humorous side of mistaken-airport landings quickly pales in the face of potential consequences—damaged aircraft, injured passengers, and pilot licenses suspended or revoked. What can pilots do to prevent this from happening, and how can the "system" be improved to help?

NASA's Aviation Safety Reporting System (ASRS) provides valuable testimony from pilots who have attempted—some successfully—to land at airports other than their intended destination. ASRS records reveal 77 instances of misidentified airports between 1981 and the end of 1987. This number is even more significant since ASRS reports are submitted voluntarily and thus represent only a fraction of actual occurrences.

Several common factors stand out in these reports: visual approaches, night or restricted visibility, similar runway configurations, no navaids available or being used, uncontrolled airport or closed tower, distractions in the cockpit. Prudent pilots would do well to study these factors to avoid joining the not-so-exclusive club of wrong airport "landers."

Beware the visual approach

A typical mistaken-identity incident happened on a bright, clear night to a B-727 crew headed for Savannah Municipal Airport (SAV), Ga. The tower at SAV was unmanned since it was after midnight. After the crew reported the airport in sight, Center cleared the flight for a visual approach and handed it off to the Savannah FSS.

All three crewmembers thought they had the correct airport in sight since the runway layout seemed appropriate and the distance from the VOR/DME looked good. Although the First Officer could not get a good ident on the ILS or ADF, the pilot continued the approach since the airport appeared to be the proper one. Descending through 1,000 feet, the Captain grew uncomfortable because the airport layout looked different from the diagram on his approach plate. He called SAV FSS for assistance. At that point, the FSS specialist relayed that Jacksonville Center had called saying the flight appeared to be lined up on Hunter AAF, about five miles south of SAV. The crew executed a missed approach, contacted Jacksonville Center, and received vectors to Savannah.

Not surprisingly, a preponderance of blunders occur with aircraft on visual approach clearances. Visual approaches are a great way to move traffic and make up time, but the tradeoff is a loss of ATC radar service for proper runway alignment at the correct airport. Ninety-nine times out of a hundred, there is no problem navigating visually to the airport. Throw in complications, such as darkness, poor visibility, a distraction in the cockpit, or an airport that does not stand out clearly, and the odds of a faux pas go up dramatically. Also, the farther out the flight is cleared for a visual, the more likely the crew will identify the wrong airport.

Do your homework

To land at the wrong airport, you must be near a similar airport. Biggs AAF is a classic example—it's less than two miles from El Paso International (ELP) and has a southwesterly runway just like the primary runway at ELP. Consequently, aircraft en route to ELP have been landing at Biggs AAF for years.

Rumor has it that some time ago an air carrier mistakenly landed at Biggs en route to ELP. Explaining to their passengers that they were going to "reposition the aircraft closer to the gate," the crew took off again and landed at ELP. That explanation may have fooled the passengers, but the company knew what happened when the AIRINC communications address-

ing and reporting system indicated one more takeoff and landing than scheduled.

Airports located in line with each other seem to be particularly susceptible to confusion. Isla Grande and San Juan International; Smyrna Airport and Nashville Metro; and MacDill AFB and Tampa International, are typical of airports that have been misidentified because of their in-line locations during certain approaches. The misidentified airports all lie on or close to the final approach path and short of the destination airport. Therefore, they are usually the first to be sighted on a visual approach. A pilot aware of commonly misidentified airports is far less likely to land at one, but a pilot in the area for the first time needs to do a little homework with an area chart and approach charts for good insurance.

Controller involvement

In many instances, alert controllers have helped prevent a landing at the wrong airport. In other situations, though, controllers have contributed to pilot errors by coercing them into accepting visual approaches before they were ready.

An air carrier flight on approach to Runway 31 at Houston Hobby experienced this situation. After the aircraft descended below the clouds, Approach Control asked the pilots if they could see the field and make a tight left turn to final. The crew had an airport in sight, but didn't have a positive identification on it, and it looked closer than they thought Hobby should be.

The controller kept asking if they had the airport, obviously anxious for them to accept a visual. Like most crews, this one wanted to be accommodating and prove they could "hack it." They confirmed they had the field in sight and concentrated their attention on getting down and slowing up.

Turning final, both crew and Approach controller realized the aircraft was lined up at Ellington AFB, not Hobby. The pilots admitted their failure to positively identify the airport, but as they put in their ASRS report, "We were sort of suckered into this by Approach Control."

Some controllers try to push a crew into a visual approach because it lightens their workload and enables them to move more traffic—they are no longer obligated to ensure IFR separation or to issue traffic advisories. A pilot who does not have good visual contact with the airport and runway must decline the visual approach.

Watch out for distractions

Distractions in the cockpit and high workload situations are prime contributors to landings at the wrong airports. Crews busy looking for conflicting traffic, trying to make the approach from a high or fast position, or deviating around weather are far less likely to properly identify the airport.

A DC-9 crew was on night vectors to Runway 29 at Louisville Standiford Airport (SDF) when they saw bright runway lights about five miles ahead. Assuming this to be their destination, the crew hurriedly set up for a visual approach. The aircraft was descending through 7,000 feet at this time, so the crew was elbows and you-know-whats trying to get into landing position. The copilot did some S-turning to further confuse the picture.

When all was said and done, the crew succeeded in getting the aircraft into a landing position—but lined up on Bowman Field instead of SDF. In their preoccupation with flying the aircraft, they didn't use their instruments to back up the sight picture. The controller and crew realized the mistake in time to prevent a landing.

Back up those eyeballs

Good operating procedures dictate that crews use all available navaids when shooting a visual approach. This simple but appropriate precaution prevented a crew from landing at Hawkins Field instead of Thompson Municipal Airport at Jackson, Miss. The crew was initially cleared for a visual approach to Runway 15R at Thompson but requested Runway 33L due to conflicting traffic. Approach Control vectored the aircraft south for Runway 33L, and the crew again reported the airport in sight. As the aircraft turned final, the HSI needles, tuned to the Thompson ILS, indicated full right deflection. The Captain asked Tower where they were in relation to the field, and the response confirmed their position to be 90 degrees off at 5 miles. The crew broke off the approach and landed safely at Thompson.

Simply dialing in an ILS or VOR/TACAN frequency isn't enough. From Day One in our flying careers, we've all been schooled to identify every frequency, but how many of us do it on every approach, particularly a visual approach? Failure to positively identify the correct ILS frequency nearly resulted in one crew landing at Anderson AFB instead of Agana Naval Air Station, their destination. The Captain had dialed in the wrong ILS frequency; all three crew members listened to the dits and dahs, but none of them picked up on the mistake. Fortunately, the weather was clear enough to allow the crew to identify the correct airport in time.

Even with proper frequencies tuned in, it's possible to land at the wrong airport on an instrument approach. This is most likely to happen on a non-precision approach, particularly when the navaid used is not located at the field.

A B-727 crew was shooting a VOR approach to a Caribbean airport with visibility at two miles in smoke and haze. As the aircraft neared the minimum descent altitude, all crewmembers were straining their eyes to penetrate the haze and find the airport.

An airport came into sight with the correct runway orientation, but displaced more to the right than the crew expected. They accepted it as their destination since the approach radial came in at an angle and the DME looked to be in the ball park. The flight landed uneventfully—at a military airport two miles away from the civil aerodrome. The Captain then compounded his error by taking off from this airport, which was not listed on the company's operations specifications. He felt there were extenuating circumstances in this situation; namely, the need to depart a military base with potentially hostile troops. But the FARs state clearly that a passenger-carrying flight is over once it lands at an airport other than the one listed in the company's operations manuals.

Interestingly, National Transportation Safety Board data reveal no air carrier accidents caused by aircraft landing at the wrong airports. There have been some close calls, such as the fully loaded widebody cargo aircraft which was 50 feet from touchdown at Dutchess County Airport, N.Y., when the Captain realized he was not at Stewart International. An almost certain catastrophe would have occurred had the aircraft landed—the runway is only 5,000 feet long, and another aircraft had been given clearance onto it. In another case, a light aircraft was forced to execute a missed approach to evade a large transport landing the opposite direction—at a misidentified airport!

What can be done

You can't back up a visual approach with your instruments if there is nothing to tune to. Possibly, nothing would do more to prevent pilots from misidentifying airports than to have a VOR at the most widely used field in a given terminal area. If this is not feasible due to terrain obstructions, or if there are several major airports close to each other, then there should be a DME on one ILS; even an ADF would help.

Improving rotating light beacons might be another way to solve the problem. Perhaps airports frequented by large transport aircraft could have a different light pattern or brighter light intensity than general aviation fields. Newark International (EWR), now the busiest airport in the New York City area, sits in the middle of the light sprawl known as the New York metropolitan area, with the closest VOR 10 miles away at Teterboro and no DME on any of the ILS frequencies. Heavily used Runway 29 doesn't even have an instrument approach, yet pilots are routinely cleared to fly visual approaches, at night, to this runway. More than one pilot, groping for EWR Runway 29 among all the lights, has lined up on a westerly runway at Linden Airport, a general aviation field just south of EWR with a 2,500-foot runway. Many crews mistake Linden Airport for EWR because its beacon is much more visible.

Another aid to pilots would be a caution on the approach plates for those airports frequently misidentified in the past. Pilots can help themselves by reporting these situations to ASRS and to ALPA's toll-free air safety line, so ASRS and ALPA can influence appropriate FAA action.

Many ASRS reports list fatigue or long duty days as factors in the crews' mistakes. Misidentifying an airport is just the kind of mistake tired crews are likely to make. Crew rest requirements and reasonable scheduling are issues that ALPA must continually stress to ensure optimum crew performance.

What airports are the most likely to be confused? The side bar identifies airports where documented cases of mistaken identity have occured, but is by no means all-inclusive. Several of the airports listed crop up again and again.

As mentioned earlier, El Paso and Biggs are two all-time favorites. A newcomer, but already a repeat performer, is Nashville Metropolitan (BNA). ASRS has received no fewer than five reports of mistaken identity here in the past year! Smyrna Airport, a general aviation field directly in line with BNA, has a long runway oriented close to the same direction as Runway 31 at BNA, and even has its own outer and inner markers (which an aircraft can pick up while shooting Nashville's ILS approach).

South Florida is another area where it's easy to mistake airports. Most of the runways in south Florida seem to be oriented east-west, and lots of big runways are located close together. Good weather also means many flights terminate with visual approaches. Miami International, Opa-Locka CGAS, Fort Lauderdale International, and Fort Lauderdale Executive are just a few of the airports which have confused flight crews on night visual approaches.

When cleared for a night visual approach to a strange airport, the little hairs on the back of your neck should rise a bit and a voice inside should call for extra vigilance. Back up the visual approach with available navaids, use inputs from crewmembers, and if it just doesn't look right, go around and shoot an instrument approach. Explaining to the folks in back why you arrived at the gate ten minutes later than planned might be a little difficult, but not half as hard as explaining why you landed at the wrong airport. After all, they have never driven into someone else's garage after a day at work, or have they?

Adapted from *Airline Pilot*

Hall of Fame of Misidentified Airports

(Editors' Note: We've added (*) a few MAC favorites to the original list.)

Intended Destination	Confused Airport
Albany County, N.Y.	Schenectady, N.Y.
Augusta, Ga., Muni	Daniel Field
Beale AFB, Calif.	Marysville Airport*
Buffalo Intl., N.Y.	Niagara Falls AFB
Castle AFB, Calif.	Merced, Calif.*
Cedar Rapids, Iowa	Iowa City
Columbia, Mo.	Fulton, Mo.
Concord, Calif.	Travis AFB*
Corpus Christi, Tex., Muni	Cabannis Navy Aux.
Dayton, Ohio	Wright Patterson AFB
El Paso International, Tex.	Biggs AAF
Houston Hobby, Tex.	Ellington AFB
Huntsville, Ala.	Redstone AAF
Lexington, Ky., Blue Grass	Frankfort, Ky., Muni.
Manhattan, Kans.	Marshall AAF*
Memphis International, Tenn.	Olive Branch Muni, Miss.
Miami International, Fla.	Opa-Locka CGAS
Nashville Metropolitan, Tenn.	Smyrna, Tenn.
Newark International, N.J.	Linden, N.J.
Oakland, Calif., Intl.	Alameda NAS
Providence, R.I.	Quonset Point NAS
Rapid City, S. Dak.	Ellsworth AFB
San Diego, Calif., Lindbergh	North Island NAS
Santa Ana, Calif.	El Toro MCAS
Savannah, Ga., Muni.	Hunter AAF
Seattle International, Wash.	Boeing Field
Standiford Field, Ky.	Bowman Field
Stewart, N.Y., Intl	Dutchess County, Poughkeepsie
Tampa International, Fla.	MacDill AFB
Overseas	
Bitburg AB, Germany	Spangdahlem AB*
Incirlik AB, Turkey	Sakirpasa, Turkey*
RAF Kinloss, Scotland	Lossiemouth*
RAF Mildenhall, U.K.	Honington*

1550th COMBAT CREW TRAINING WING

Higher education for the combat crewmember.

Lt. Col. Thiery G. Curtis and Mr. Willard A. Davis at the Air Rescue Museum.

Sgt. Ken Knutson demonstrates rappelling techniques.

Mr. Willard A. Davis conducting a no-notice flight line safety check.

Maj. Brian Johnson preparing his helmet for the upcoming NVG flight.

Col. Charles R. Holland, 2d from right, and his senior staff.

Capt. Karl B. Major, standing, and Major Ken Larson, second from left, at mission prebrief.

By Maj. Dale E. Van De Ven
Associate Editor

What do 21,000 people, and a quarter MILLION jackrabbits and prairie dogs have in common? The answer is they all share the 55,000 acres or 88 square miles that make up Kirtland AFB, home of the 1550th Combat Crew Training Wing (CCTW) and its host wing the 1606th Air Base Wing (ABW).

Located on the southern edge of Albuquerque, New Mexico, an assignment to Kirtland is considered by some to be one of the Air Force's best kept secrets, but, as Col. Stephen Gemlich, 1550 CCTW/DCM put it, "You've got to love earth tones!" Albuquerque is definitely on the arid end of the scale, with an altitude of roughly 5,600 feet and a normal humidity range of 28 to 59 percent—green better not be your favorite color.

Shortly after my arrival at Kirtland I was assured by Mr. Willard A. Davis, 1550 CCTW Chief of Ground Safety, that I was, in fact, still in the United States—a fact contradicting the opinions expressed in a *Wall Street Journal* poll where most businesses in the United States thought New Mexico was a sleepy country, south of the border, belonging to our southern ally!

Typical of *TMF* refugees, I found my way to the Wing Safety Office where Maj. Brian Johnson, Chief of Safety (former chief as of this writing), gave me a quick rundown of what the 1162 personnel assigned—115 officers, 946 enlisted, and 101 civilians, do during the workday after they've managed to avoid the one in four uninsured, and one in ten unlicensed drivers they pass on their way to work.

The 1550 CCTW is the advanced helicopter, HC-130, and pararescue training school for the United States Air Force. As such, it's one of three MAC formal schoolhouses with the other two located at Little Rock AFB, Ark.; and Altus AFB, Okla. In the words of Col. Charles R. Holland, 1550 CCTW/CC, "We train combat crewmembers and pararescuemen for Special Operations Forces and Combat Rescue."

To gain some insight into how the 1550th accomplishes this mission, I spent some time with Lt. Col. Theiry G. Curtis, Technical Training Squadron Commander. According to Colonel Curtis, over 1,500 students a year pass through the unit training programs. Of this number, approximately 1,000 are sent here for simulator refresher courses. These students are fully qualifed crewmembers assigned to units worldwide, who come to Kirtland for specialized training.

The fixed wing students attend the five-day program where Day One is spent on Aircrew Coordination Training (ACT) and the remaining four days are for system refresher. The helicopter simulator is a four-day course where, once again, the first day is spent in ACT and the remaining days in system work.

As the home of Special Operations and Combat Rescue Training, Kirtland will receive additional simulators over the next few years. Shortly, aircrew members will be able to hone their skills in MC-130 Talon, MH-60 Pave Hawk, and MH-53J Pave Low simulators. The projected MH-53J Pave Low unit will be, other than the space shuttle, the most sophisticated simulator in the Air Force inventory!

Not all the flying at Kirtland goes on indoors; four to five hundred aircrew members are sent

Left to Right, SSgt. Mike Hyers monitoring a weapons checkout by SSgt Jerome Milligan Jr. and SSgt Jerry Dow.

Capt. John Campbell (far right) speaking with German exchange officer Capt. Karl Schafer.

Mr. Willard A. Davis at the Air Rescue Museum flight display.

H-21

here each year for initial or mission qualification training. Some of the programs available include: Basic Flight Engineer, MAC Instructor Lead In, Key Staff, and HC-130, H-60, H-3 and H-1 crewmember training. Recently, the first group of MH-53J students arrived; the first of many who will PCS to Kirtland for the new seven-month Pave Low course. This group will initially qualify in basic H-53 airframe and then move into MH-53J for refuel mission qualification.

Aircrew students normally transition into their weapon systems and then advance to more complicated tasks. For helicopter students the training may include low-level day/night formation, aerial refueling, high altitude remote site operations, gunnery, water hoist and landings, enhanced navigation, and night vision goggle operations. HC-130 training includes low-level day/night formation, assault landings, aerial refueling, airdrops of personnel and equipment, combat tactics, and night vision goggle operations.

Not all graduates from Kirtland wear flight caps. Each year nearly 150 students, the majority of which are here for initial qualification, attend the Pararescue School.

Pararescue candidates hone their skills as combat trauma specialists and are trained in SCUBA, mountain climbing, parachuting, weapons firing, survival training, combat tactics, and aircrew duties. Upon graduation, the new pararescue specialists are awarded the distinctive maroon beret. The school also looks out for our sister services by providing advanced medical training to Navy SEALS and similar units.

With all the flying activity going on at Kirtland, it's easy to understand how 75 percent of the people assigned to the 1550th belong to the wing maintenance community. According to Maj. Michael N. Wetherall, AMS/CC, as far as the maintainers are concerned "Manning isn't the problem. Training is the problem." The current airframe inventory at Kirtland include five H-1, three CH-3E, three HH-3E, four CH—53A, four MH-53J, six UH-60J, four HC—130H, and four HC-130E. So, as you can see, the maintenance folks must be able to support not only five different weapon systems but a considerable variance in those systems as well. The end result is the line maintenance troop has to be more versatile than in the past in order to meet the wing's requirements and keep topnotch airframes on the flight line.

One of, if not the, most challenging course of instruction offered to both fixed and rotary wing students is the green world of night vision goggles (NVG). The rationale behind this intensive NVG program was explained by Colonel Holland, "The reason it's important that everyone be

exposed to NVGs, in whatever airplane they're comfortable in, is it becomes one less variable whenever they go into the Pave Low or Pave Hawk. We are trying to expand our SOF orientation throughout the entire wing to make sure we're going to be able to put out that 'top quality' graduate to meet the needs of both special operations and combat rescue."

I was given the opportunity to try a set of NVGs on an HC-130 refueling flight where Capt. Karl B. Major, 1550FTS/SE, further explained the value of the goggles. According to Captain Major the primary mission of the HC-130 is low level ingress/egress into a threat area and, "In an actual situation we probably would be doing it at night, for complete avoidance. Our job is to go in undetected and leave undetected; that means avoidance of everything!" The NVGs make a significant difference in the crew's ability to accomplish the mission. They do work, and they certainly do make a difference.

There is a down side to the amount of night flying required to meet the unit's goals. The individual crewmember is exposed to some significant juggling of his sleep cycle and, as put by Capt. John (Scott) Campbell, 1550 CCTW/FSO, "You just can't turn your circadian rhythm on and off; by the time you adapt, the night flying cycle is over! In addition, we have a small number of airframes and often only one or two guys who are qualified to do the training and the students must graduate, so scheduling can be atrocious. We put a lot of pressure on the instructors to generate quality training, and to be very creative, to pull the whole training scenario together."

So how does the unit handle the inherent problems of night orientation and a schoolhouse environment? Here again, Captain Campbell had some insight, "There is a heightened safety awareness and attitude here to not force anything; if anyone on the crew has a problem, they don't hesitate to bring it up. Our crews are not intimidated; if they want to question operations on something or have a discussion about an interpretation, they don't hesitate. There's a lot of experience here and they feel comfortable in the atmosphere that's been established. We have a strong flying corps."

Still, it takes more than extra effort on the part of rated personnel to establish and maintain a safe working environment. It takes a safety awareness throughout the wing, which is probably why one of the first things Colonel Holland did upon assuming command was to issue this safety directive to all men and women of the 1550th, "If you can fix it, fix it! If you can't fix it, get it to the people who can!" This "can do" attitude isn't limited to the 1550th but can be found throughout Kirtland, as demonstrated by the outstanding support the unit ground safety program receives from the 1606 ABW. As Colonel Holland stated, "There are two MAC wings here; all our support comes from the 1606th ABW; we're partners; we do this together."

This partnership mirrors Kirtland's relationship with the city of Albuquerque. According to Colonel Holland, "We're getting a lot of super support from the community. For example, we have drop zones that are donated to us. We have a memorandum of agreement between us and the individual land owner. They just donate the land, which shows the relationship we have with the community. They want us here, and they want us doing the taxpayers some good!"

Kirtland's relationship with Albuquerque is a two-way street. The base has been able to provide local rescue support to the civilian population. This was demonstrated on 18 June when a MH-53J NVG training sortie was diverted to rescue an injured hiker trapped in a steep canyon in the Pecos mountains.

What does the future look like for 1550th? Among future plans is continued support of the exchange officer program, where highly experienced pilots from NATO countries are stationed at Kirtland. This allows the 1550th to gain insight and technique while at the same time exposing our NATO allies to mission capability not available at their home country. The wing also plans to continue interfacing with the operational units who supply the student body as much as possible. This interface insures the user is happy with the school graduate. If not, the 1550th examines the programs to find what's needed to meet the user's requirements. Major Johnson pointed out that, "We are driven by the user, instead of the user being driven by us!"

The wing is also anxiously awaiting the arrival of the MH-60G Pave Hawk, which will arrive this fall. This helicopter was designed specifically for special operations and will also be the mainstay of the combat rescue inventory and, according to Colonel Holland, "Probably for the first time in our history, we have built an airplane to do the mission of combat rescue. In the past we've taken an existing airframe, such as the Jolly Green and, without putting a lot of sophistication into it, went out and did the job. Now we've got an airplane that was designed to do it!"

I can assure you, the 1550th does do its job.

Flying-Hour Milestones

10,000

312 MAS
CMSgt. Leonard A. Crozier, Jr.
MSgt. James E. Franklin

446 MAW
Lt. Col. Christopher M. Joniec

7,500

6 MAS
Col. Bart C. Hogan

18 MAS
MSgt. Willie R. Ruff

20 MAS
SMSgt. Ronald R. Faretra

37 TAS
MSgt. Johnny B. Harp

459 MAW
Lt. Col. Theodore D. Siepmann

5,000

3 MAS
Lt. Col. Gordon L. Minner
MSgt. Delbert E. Fox
MSgt. Dennis M. O'Donnell

6 MAS
Maj. Richard H. Weeks, II.

9 MAS
SMSgt. George C. Marasco
MSgt. Stephen A. Gresham

18 MAS
Lt. Col. Philip D. Spencer
CMSgt. Harry W. Mattox
MSgt. Gary T. Richardson
MSgt. Vernon C. Robinson
TSgt. John P. Hayden
SSgt. Ernest D. Vera
SSgt. Robert S. Viquers, III.
SSgt. Alfonso D. Newton

21 SOS
Maj. Frank A. Gray

39 SOW
Lt. Col. Robert L. Clark

305 ARRS
Capt. Charles A. Orr

53 WRS
MSgt. Peter J. Guittari

435 TAW
Maj. Charles L. Morton

459 MAW
Capt. Wallace H. Cabler, Jr.

756 MAS
Maj. Robert L. Glendening
Maj. Randall W. Young
Capt. John Czabaranek
SMSgt. John H. Ott
MSgt. Albertino B. Hairston

1550 CCTW
SMSgt. Lynn E. Hendon

608 MAG
Maj. Kenneth W. Nord

2,500

3 MAS
Maj. Thomas W. McCarthy
Capt. Matthew A. Gailing
Capt. Matthew G. Taylor
TSgt. Glen K. Wong

9 MAS
Capt. Steven H. Bruning
Capt. Edward C. Flynn
MSgt. Howard A. Gregory
MSgt. Russell L. Henn

17 MAS
Sgt. Fredrick E. Fox

20 MAS
Capt. David A. Easton

41 RWRW
Maj. Lee A. Meador
MSgt. Michael W. Lael
TSgt. Bradley E. Opatz

73 AES
Maj. Betty C. McCoy
SSgt. Ellen L. Luhrsen

166 TAG
SSgt. James D. Godby

305 ARRS
Lt. Col. William J. Sheils
Maj. Robert W. Hidley, Jr.
Maj. Carey W. Ripple

315 MAW
SMSgt. Robert C. Elkins
MSgt. Ronald L. Armistead
MSgt. Scott P. Armstrong
MSgt. Michael L. Atkins
MSgt. Paul S. Blau
MSgt. William H. Cadmus
MSgt. Roy Carson
MSgt. Lewis S. Crabtree
MSgt. Dwaine B. Dodd
MSgt. Michael E. Hawkins
MSgt. Gary W. Jerome
MSgt. Charles E. McDUffie
MSgt. Harvey C. Merrett
MSgt. Carl S. Padgett
MSgt. Darrell L. Wyrick
TSgt. William L. Allison, Jr.
TSgt. Gerald E. Bechtel
TSgt. Vance A. Bentley
TSgt. Mervin D. Hanson
TSgt. Arthur M. Henssler
TSgt. Dennis L. Moore
TSgt. Michael S. Smith
TSgt. Johnny M. Spanos
TSgt. Gary L. Winter
SSgt. Mark L. Coleman

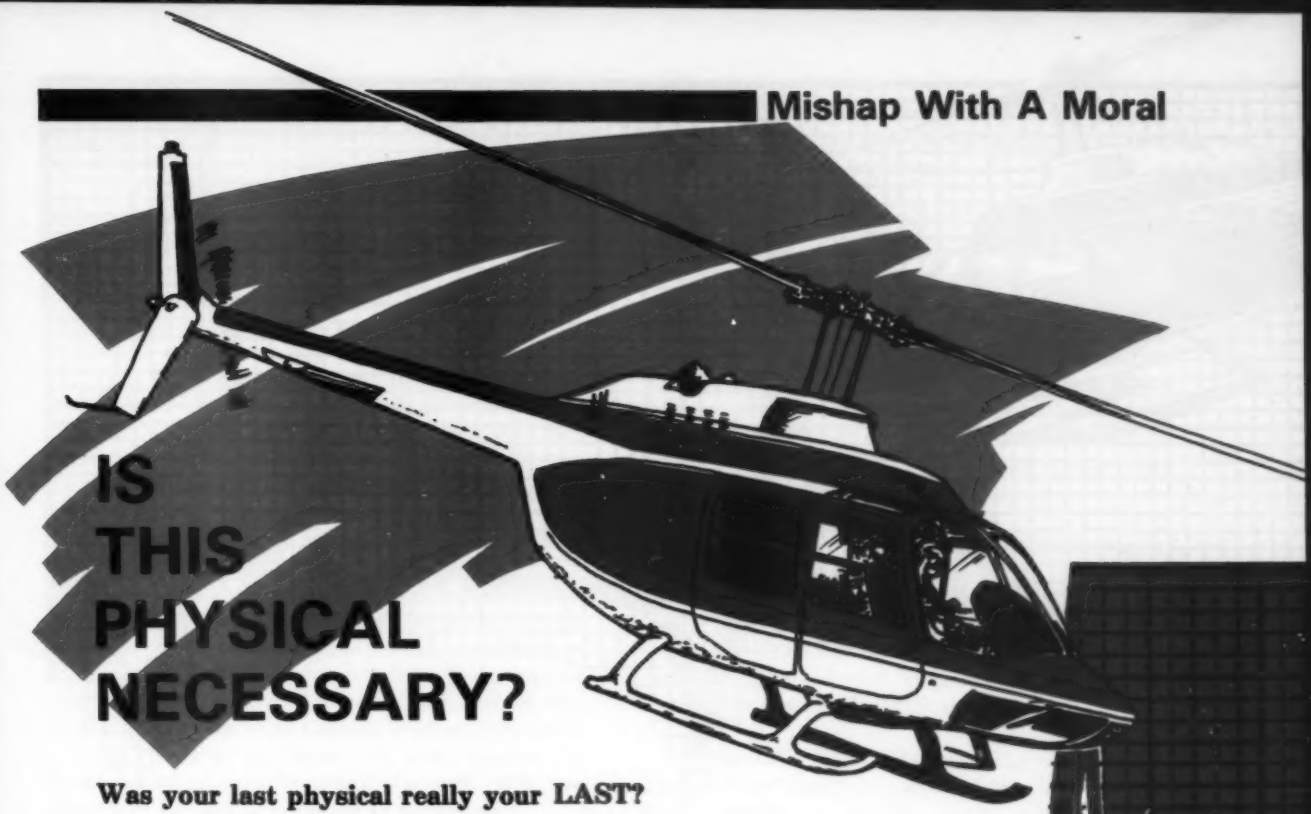
911 TAG
Maj. Rickey Waddell
Capt. Joseph J. Poznik
TSgt. Thomas G. Gavorcik
TSgt. J. Jumba

608 MAG
Maj. Frank E. Dressel
Capt. James M. Cook
Capt. Bradley V. Root
Capt. Tami M. Smith

1,000

41 RWRW
Maj. Robert P. Donnely
Capt. John W. Blumentritt
Capt. Brett M. Cupp
Capt. Charles D. Curtis, Jr,
Capt. Thomas P. Deeley
Capt. John D. Edwards
Capt. William C. Ide
Capt. James A. Homoki, Jr.
Capt. Clifford J. Lapp
Capt. Michael J. Pillion
Capt. Stephen R. Spillane
Capt. Christopher Stewart
Capt. Albert R. Sunday
Capt. Joel D. Wilcox
1st Lt. David W. Kyger
1st Lt. Mitchell A. Petersen
1st Lt. Thomas E. Winters
TSgt. Hank F. Wiswell
SSgt. Richard H. James
SSgt. Harold G. Jimenez
SrA. Gary Spitzer

Ranks and units are those at time of award. ★



IS THIS PHYSICAL NECESSARY?

Was your last physical really your LAST?

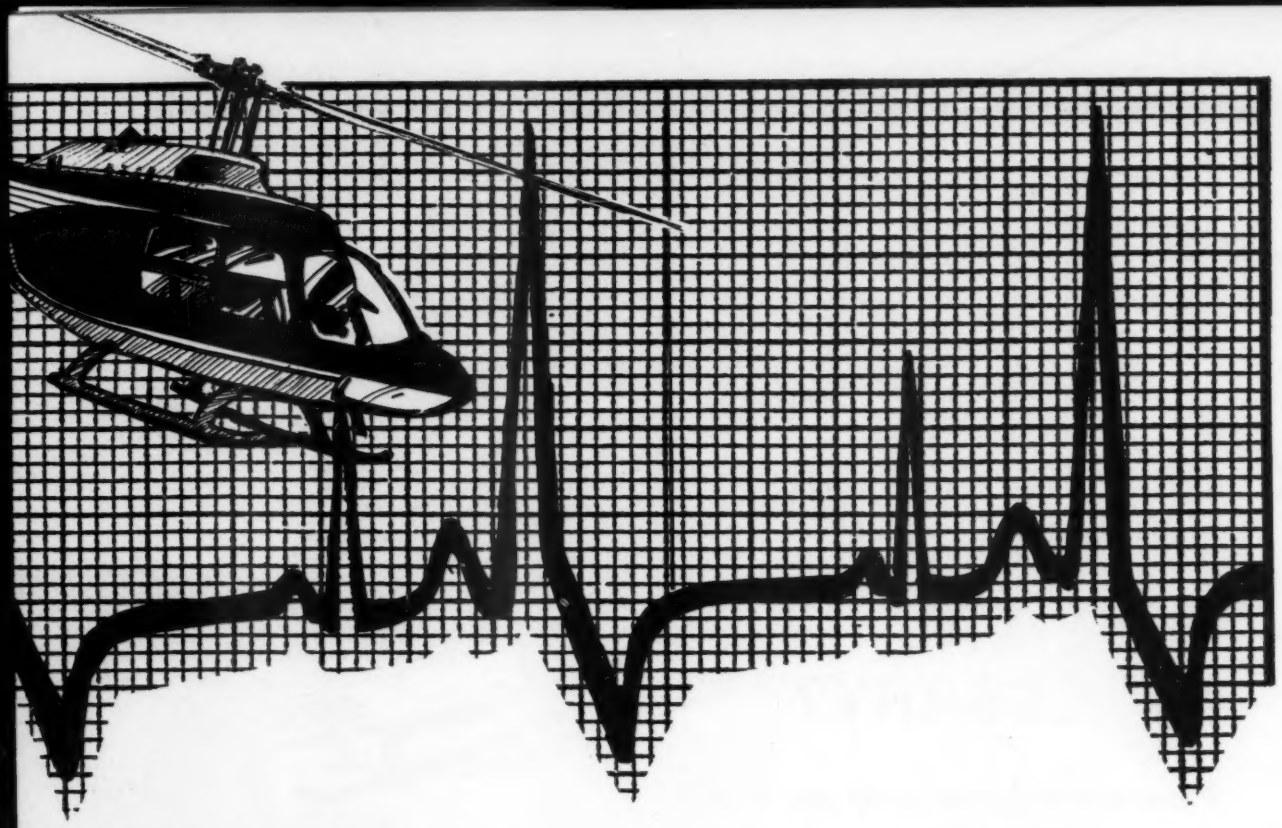
WAS YOUR LAST PHYSICAL Q-1?

It often seems that as crewmembers enter the stage of life known as "middle age" they look upon their relationship with the flight surgeon as adversarial and the annual flight physical as a harassment tactic designed to frustrate their flying career. The individual aviator has such a self-interest in his medical clearance that he can lose sight of exactly what the physical is intended to prevent. Even worse, an individual will occasionally find a way around the system which, as we shall see, can lead to disaster.

FLIGHT HISTORY

On 3 August 1986, at 1130 Pacific Daylight Time, a Bell 206B helicopter departed Livermore Airport, Livermore, Calif., with the pilot and one passenger aboard. The flight was scheduled to fly near Danville, and then continue to Discovery Bay under visual flight rules. The pilot did not file a flight plan, nor was he required to.

At 1150, the helicopter landed at a ranch near Danville. The pilot remained seated in the right front seat while the passenger deplaned and visited friends.



The passenger told the ranch owner he intended to fly over a mutual friend's residence at Alamo and continue to Discovery Bay. The passenger reboarded and the helicopter departed the ranch at 1220 hours.

Ground witnesses reported the helicopter approached the residence in Alamo from the west at 50 feet AGL. While flying over the dwelling, it entered into a 20-degree left bank turn completing two turns. At the start of the third revolution, the helicopter entered an abrupt 90-degree left bank, pitched downward about 45 degrees, and crashed into trees. There was no post impact fire. Witnesses reported the engine and rotor systems sounded normal and steady throughout the mishap sequence. Both pilot and passenger were killed.

PILOT'S HISTORY

The pilot, 49, weighed 220 pounds and was 6 feet 3 inches tall. He held an ATP with an airplane single-engine land rating; the certificate was endorsed for commercial pilot privileges in airplane multiengine land and rotorcraft-helicopter. The pilot was hired the month prior to the mishap and at that time had a total of 16,272 flight hours with 5,110 in rotary aircraft.

From October 1981 to January 1983, the pilot was being treated for a heart condition known as atrial fibrillation, or abnormal contraction of the upper part of the heart. During this time, he was given medication and encouraged by his doctor to stop drinking and smoking. The medication failed to correct his heart condition, and he continued working as a helicopter pilot on a fishing boat. He admitted he "drank heavily" while in port, smoked a half pack of cigarettes a day, and often failed to use his prescribed medication. On 7 May 1986, he experienced chest pains and, while in the emergency room, suffered a heart attack. He was resuscitated by the attending physician and put into intensive care. He recovered and was discharged from the hospital 14 May 1986.

ANALYSIS

There are three classes of medical certificates available to pilots. A first-class medical certificate is required for airline transport operations that require the pilot in command (PIC) to hold an airline transport pilot certificate; the certificate is valid for six calendar months. A second-class medical certificate is required for all other commercial operations including on-demand air taxi and some commuter operations. The pilot engaged in such operations must hold at least a commercial pilot certificate and the medical certificate is valid for 12

calendar months. A third-class medical certificate is required for all noncommercial flight activities and is valid for 24 calendar months.

The Federal Air Surgeon (FAS) is authorized to issue a medical certificate to applicants who do not meet medical standards for the type of certificate they are seeking. The FAS may impose any condition, such as establishing a limiting period or condition on the certificate, require the applicant to submit to a medical flight test, or require the applicant to provide the results of any additional medical testing necessary to evaluate his or her medical condition. Part 67 of the FARs does not require any additional medical tests requested by the FAA be performed by a board-certified physician in the specialty of concern. Applicants for a first-class medical certificate are required to submit to a resting EKG on reaching their 35th birthday or annually after reaching their 40th birthday. Regulations do not require an EKG for second-or third-class medical certificates. The pilot was issued a valid second-class medical certificate in December 1980. Even though this certificate expired one year later, and he was employed as a pilot from January 1982 until his death in 1986, there is no record the pilot applied for another medical certificate until January 1984. The history of his last application is as follows:

26 Jan 1984: The pilot hired a FAA designated airman medical examiner (AME), practicing at a rehabilitation clinic, for a coronary evaluation. This AME, who was not a board-certified cardiologist, recommended the pilot be granted a special-issuance second-class certificate.

7-8 Jun 1984: The FAA medical consulting panel, which included three board-certified cardiologists, recommended denial of the pilot's request for medical certification.

24 Sep 1984: The FAS denied the pilot's request for certification.

Oct 1984: The FAA administrator appointed a new FAS.

Dec 1984: The pilot met with the newly appointed FAS who assured him he would review his application.

28 Jan 1985: The FAS issued the pilot a special-issuance second-class medical certificate that contained a "not for PIC duties" restriction.

27 Aug 1985: The pilot received a letter stating his limited certification would expire 31 January 1986, and requesting a cardiac examination be done by an internist or cardiologist.

18 Sep 1985: In a letter to the FAS, the pilot thanked the FAS for getting him "legally back in the air again." He also requested the restriction, not valid for PIC, "be lifted."

2 Oct 1985: The FAS telexed the aeromedical certification branch manager (CAMI) and instructed him to remove the pilot's second-class medical certificate limitation and issue him an unrestricted certificate if the "follow-up reports, due January 1986, are favorable."

2 Apr 1986: The AME, who was not an internist or cardiologist, reevaluated the pilot and administered another stress EKG.

15 Apr 1986: The AME sent a letter to the CAMI recommending the pilot be granted an unrestricted second-class medical certificate.

5 May 1986: The CAMI issued the pilot a second-class medical certificate without the "not valid for PIC" restriction. In the letter sent with the certificate the manager stated in part: "... You must remain under medical surveillance and must report any adverse change in your medical condition to this agency. In such event, you must cease all flying activities until you are again cleared by the Federal Aviation Administration . . ."

The pilot received his unrestricted medical certificate while he was in the hospital recovering from his 7 May 1986 heart attack.

PROBABLE CAUSE

The Safety Board found no evidence of any failures or malfunctions of the helicopter's airframe or engine. The board determined most probable cause of this accident was pilot incapacitation resulting from a heart attack.

APPLICATION TO MAC

In the case above, the pilot searched until he found a doctor who would tell him what he wanted to hear. He then used that information to slip through the FAA system. Air Force medical review procedures are designed to prevent such an event, but whenever a crewmember self-medicates or uses physicians not familiar with flight medicine, isn't he really doing the same thing and endangering himself, his crew, and his career? ✈

Adapted From *NTSB AAR-8804*

AN UNHEARD VOICE

I know what happened. I was there!

By Capt. Charles M. Henegar
80th FTW
October 1983

"They're just taking their best guess! That's not what happened! No! No! No! Someone . . . Please hear me!"

I was the pilot. I was at the controls and actively flying the aircraft at the time of the crash. I know what happened. I was there.

The mishap investigation board determined I was the cause of the mishap. They used the latest, most modern investigative technique and they still couldn't piece it all together. I wish I could have given them a clue, a hint—anything to put them on the right track. Unfortunately, I was removed from the mishap site in a bag. The comments I heard were not very comforting either.

"What a waste!"

"He just drove it into the ground."

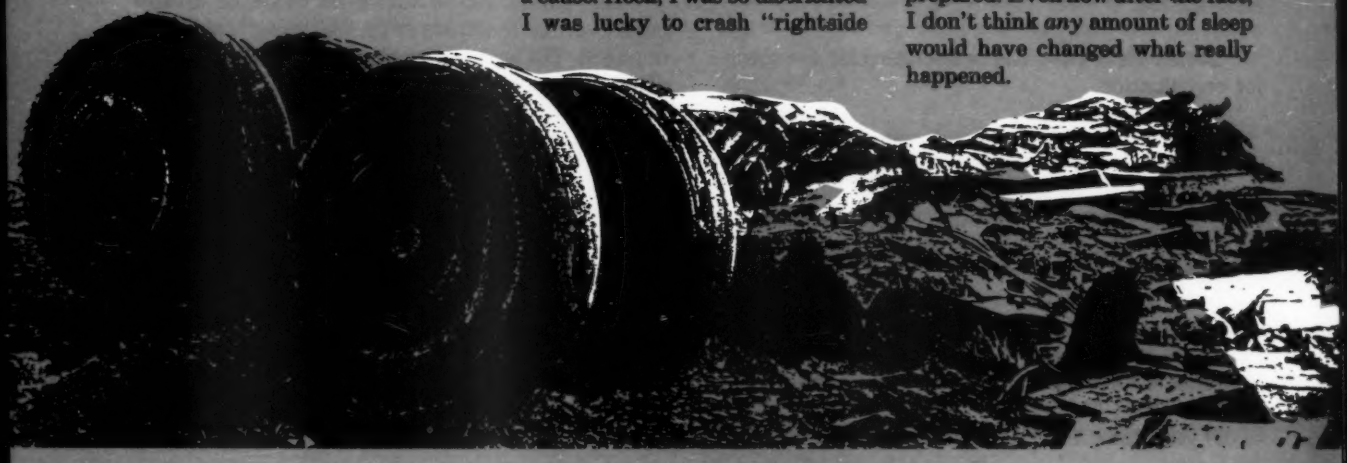
"Yeah, looks like pilot error, plain and simple."

The mishap investigation board spent thirty long days gathering, sorting and analyzing data. Unfortunately, the wreckage was about all the data available. They covered all the areas: Maintenance, crew qualification, supervision, training— everything checked out. But then I knew it would. The board also took a hard look at the landing environment, weather, and human factors.

In the final report they lumped all these factors together and implied that I might have been disoriented. However, the distraction, if any, was not sufficient enough to be considered a cause. Heck, I was so disoriented I was lucky to crash "rightside up." Looking back on it, I should have "crashed" inverted, then the board would have known I was disoriented and they might have pinned it down.

In the area of crew rest, the board concluded I was given the appropriate amount of time; however, they thought I could have used it better. I got five hours of sleep prior to alert. Then I waited five more hours for the aircraft to be in commission. I then flew for three hours up to the time of the mishap.

So, here is where the board hung their collective hats. They said that five hours of sleep was insufficient for peak performance. Bingo! Pilot error! Now, I can't argue with that. But I do know I felt good. I was primed for the mission and thought I was well prepared. Even now after the fact, I don't think *any* amount of sleep would have changed what really happened.



Here's the accident from another point of view. This is what I saw.

The field was in the desert about 1,000 miles from nowhere. It was austere, to say the least. There was a radio antenna tower about 200 feet tall, two miles from the runway. It had a flashing red light on top and a steady white light at about the halfway point. Other than the runway lights, there were no other discernable ground references. (What the board didn't realize was that *I didn't know* the tower was there.) It was a pitch black night—there were no stars, no moon—nothing. The only approach was a TACAN which required us to circle to land. Have you ever done a night circle to a strange field at an austere location? I tried! Once! The board said I was current and qualified for circling approaches. After all, I *was* a flight examiner.

I had two options for the approach and landing. I could use the TACAN and set myself up for a visual straight-in, or fly the published TACAN approach to a circle. I opted for the latter since I was unfamiliar with the area and wanted to take a closer look. The TACAN brought me in almost perpendicular to the runway. I had the field in sight but there was nothing to key off visually, so I flew the approach primarily on the gauges. I figured I would overfly the runway, check it out, then circle to land. I had started my descent about fifty miles out and nailed it. I never had to level off. I was proud of myself.

As I said, for the most part I was on the gauges. As I approached the runway, everything looked good—airspeed, altitude, and heading. I began a left 45-degree bank turn to position myself on a modified downwind. About halfway through the turn, I glanced up from the instruments and that's when I saw what appeared to be an airplane. I couldn't determine direction, altitude, or speed so I snapped the aircraft out of the bank (a big mistake), and you guessed it! Vertigo! Bad! The gyros in my head failed instantly. I continued to watch the flashing red and steady white lights for any sign of movement (my last big mistake) and let me tell you there was plenty. Those lights were moving everywhere. Then suddenly they went out. Quiet. Dead silence.

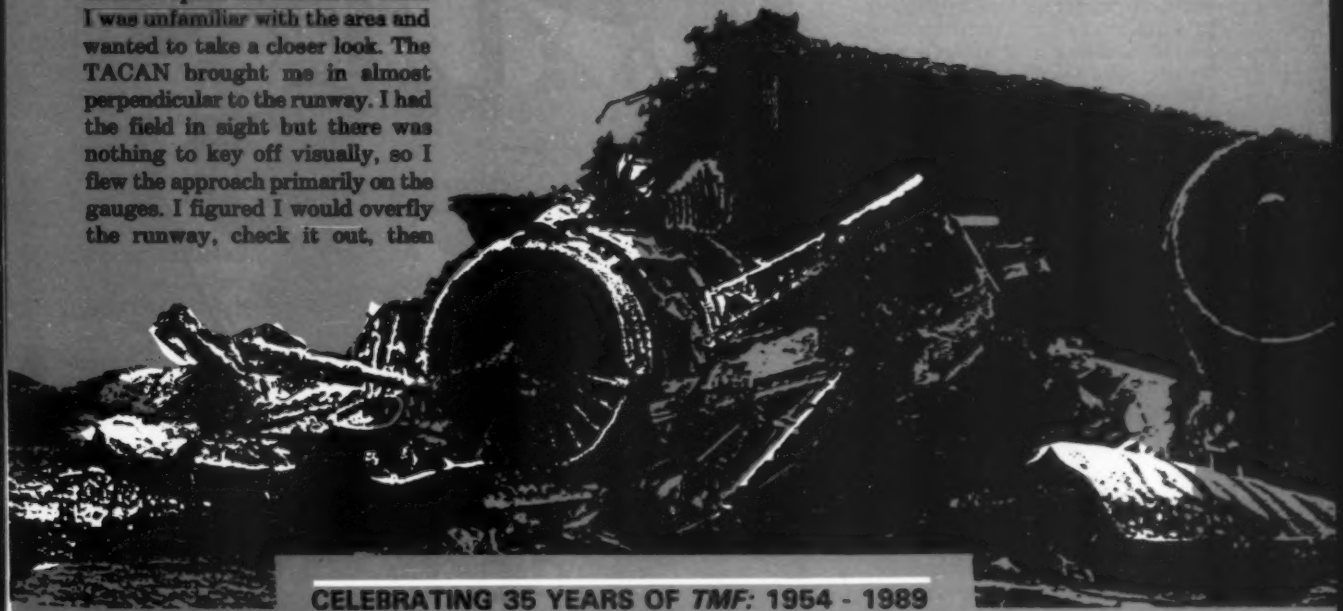
Now, I don't blame the board. They did a pretty good job considering what they had to work with—less than I did, and look where it got me. No, they're *good* at what they do. But I sure could have saved them a lot of time and effort. I should have known that tower was there. It was on the approach plate. I just didn't notice it. I should have looked and seen it during the approach. I shouldn't have been fooled. I should have gone to the gauges when my head went "tilt." *I should . . . I should . . . I should . . . .*

You know what the really sad part is? I'm not around to share my story so others don't make the same mistakes.

Yeah, mishap investigation boards do a good job of putting the pieces back together but there's nothing like first hand information.

I just wish someone knew my story . . . .

"Suddenly the lights went out. Quiet. Dead silence."



QUICKSTOPPERS

CELEBRATING 35 YEARS OF *TMF*: 1954 - 1989

ALL ENGINES . . .

(February 1988)

An HH-3, on short final to an LZ during an NVG formation approach, sucked up a clear plastic fertilizer bag. The persistent and pervasive foreign object was drawn over the intake of one engine, thereby strangling available cooling air. The subsequent air starvation resulted in virtually complete heat-induced destruction of the engine hot section for a total cost of 14,000 smackers.

"DEER" JOHN

(May 1986)

Just when you thought the Bird Aircraft Strike Hazard (BASH) program was reducing the chances of aircraft colliding with nature's non-human fauna, something else jumps in your way. The crew of a MAC aircraft operating into an East Coast NAS discovered this the hard way.

The crew was unpleasantly surprised during landing rollout when they struck a deer grazing on the runway centerline. The results of this encounter included a lot of mushed-up venison and considerable damage to the aircraft's nosegear. The investigator noted this was the fourth deer strike to occur over the last several months.

Efforts to reduce this hazard included increased deer hunting in the area, fencing off portions of the runway, and chasing deer off the runway with fire trucks. If these efforts prove unsuccessful, the installation commander will take harsher steps to eliminate the problem. In the meantime, beware, particularly at night, when deer on the runway may not be seen by tower operators.

QUICKSTOPPERS

LOOK BEFORE YOU SWITCH

While descending through 4,000 feet MSL, the left seat C-12 pilot inadvertently moved the cabin pressure dump switch and depressurized the aircraft. This particular airframe was being used as a test bed for the HSI failure warning system scheduled for installation on all C-12s. The crew was following a modified checklist which directed an HSI warning system check. The recently installed switch was located a scant two inches away and similar in shape and color to the cabin pressure dump switch. Since both switches moved in the same direction and were in direct alignment, it isn't hard to understand how he made the mistake. Once again, a pilot's misplaced touch resulted in an embarrassing and potentially dangerous situation.

FROM THE CIVILIAN SIDE

The National Transportation Safety Board recently investigated two incidents that occurred at Houston's Hobby Airport (HOU) over a three-month period. Twice, commercial carriers departed from a runway other than the one cleared. The runways in question intersect at their approach ends; apparently the 50-degree difference in runway headings wasn't enough to alert the aircrews of their impending error. Unfortunately, the last 2,200 feet of the runway used were closed at the time, leaving only 3,800 feet available. Although both aircraft were able to take off, each hit barriers marking the start of continuing construction. The value of a heading check prior to takeoff roll, especially at an unfamiliar field, quickly became more apparent to everyone involved.

(Courtesy Business and Commerical Aviation, June 1989.)

QUICKSTOPPERS

IF IN DOUBT -- STOP

This adage is taught from Day One in the Air Force. If it looks unsafe or even questionable, stop the operation and fix it. A C-5 crew recently forgot to apply this axiom during taxi from parking at a non-MAC transient base. The pilot moved the aircraft forward approximately 50 feet and started a right turn. The scanner, who was clearing out the left window, advised the pilot that a light pole was nearby, so the pilot slowed down but continued to taxi and cleared this obstruction. As the pilot tightened the turn, the scanner called "stop," doubting the wing would clear the next light pole. The pilot applied the brakes; however, by the time the aircraft came to a complete stop, the left wing had struck two light poles.

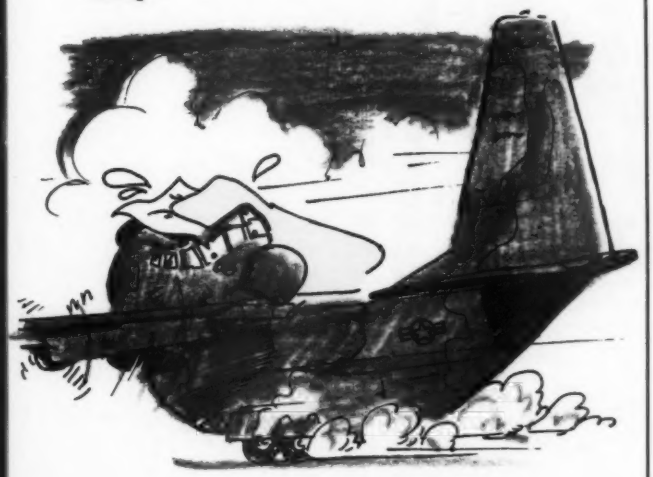
Investigation showed poles along the newly constructed taxiway were added to the original plans without taking into consideration the types of aircraft using the pavement or AFR 86-5 obstacle clearance criteria.

We realize no one can see the wing tip of a C-5 from the cockpit, and the ground speed of a wing tip in a turn is considerably faster than the taxiing aircraft. Hey guys, what happened to the concept of deplaning a crewmember to ensure clearance when taxiing in an even remotely congested area? More importantly, why do we have to continually relearn such basic lessons? Heads up, folks. We don't have the resources of time or money to waste.

THE FLAP OVER FLAPS

The C-130 FCF crew had pronounced the "E" model Herk airworthy and was getting some practice in the VFR pattern. Following a 100 percent flap touch-and-go landing, the pilot suspected something amiss on takeoff, after the flaps were raised to 50 percent. The pilot found that excessive right rudder and left aileron were needed to maintain straight and level flight at 150 KIAS. The scanner quickly confirmed the outboard edge of the left outboard flap at 100 percent with the inboard edge and inboard flap at 50 percent. The right flaps were also at 50 percent. A controllability check at 10,000 feet showed the aircraft was manageable at the 50 percent flap landing speed, and an uneventful landing was made IAW Dash One procedures.

Investigation revealed the bicycle chain connecting the outboard flap jack screw to the torque shaft gear box was disconnected preventing the jack screw from turning when the flaps were raised. The kicker—this type of malfunction is not prevented by the asymmetrical flap sensing system. Although the flap segment was severely warped with numerous rivets sheared, the airframe was not damaged. The situation would have been significantly worse had the flaps been fully raised after takeoff. Murphy must have been asleep.



GUNS, GUNS, GUNS

The term "night drop" recently took on new meaning for this HH-3E crew when they managed to jettison an M60D machine gun barrel during an evening live-fire mission. The crewmembers were all wearing night vision goggles (NVG) and the gunner had his NVGs focused outside the aircraft. While preparing the weapon for firing, the gunner's communication cord became entangled between the gun mount, helicopter's sidewall brackets, gunsight, weapon carrying handle, and barrel latch lever. During the struggle to free himself, the gunner tugged several times, with considerable force, on his communication cord. He successfully released himself but also inadvertently unlocked the barrel latch lever. As you might expect, the barrel stayed in place until the first round was fired. It then departed the helicopter, becoming a very expensive but rather ineffective bomb. Once again, a crewmember pulling on something in the dark got more than he bargained for.

CELEBRATING 35 YEARS OF *TMF*: 1954 - 1989

FORGOT SOMETHING?

(May 1987)

During a transition and emergency procedures training sortie, the pilots of an HH-1H briefed and initiated simulated fuel control failure. However, after lowering collective, the pilot failed to reduce the throttle to flight idle *before* he moved the fuel control switch to the Emergency position as called for by the "bold face" emergency procedure contained in the flight manual.

The entire mishap sequence happened so fast, the IP in the other seat was unable to prevent it, but did manage to recover the aircraft safely after the engine and rotor began to overspeed. The result of this memory lapse included over $45,000 of collateral equipment damage and inspections.

The point should be clear; reaction to any emergency *must* be timely, but not accomplished *so* rapidly that they are accomplished improperly.

INSPECTOR GENERAL JAMES L. COLE, JR. PINS ON FIRST STAR. MAC's new IG receives his first star from General Duane H. Cassidy, CINCMAC, and Carie Cole, his spouse. General Cole returns to MAC after serving a Joint Staff tour as Assistant for Joint Matters. He is a command pilot with 6,000 total flying hours in C-141s, AC-47s, and EC-121s.

McCHORD SAYS GOODBYE TO C-130s. The last Lockheed Hercules has departed making way for conversion of the 36 TAS to the 36 MAS. One chapter in the 49 year history of McChord comes to a close and a new chapter begins.

OUR SINCERE REGRETS TO THE DAEDALIAN FOUNDATION. We goofed! We were so busy congratulating ourselves on winning the Major General Benjamin D. Foulois Memorial Award, we neglected to mention the award was established and presented by the Order of Daedalians. To us, the award is synonymous with the Daedalians, however, we realize this may not be common knowledge.

TOUCH N GO

☆ U.S. Government Printing Office 1988—864-015/11